**REMARKS**

Favorable reconsideration of this application, in light of the following discussion and in view of the present amendment, is respectfully requested.

Claims 1, 5 and 19 are amended. Claims 1-24 are pending.

**I. Rejection under 35 U.S.C. § 112**

In the Office Action, at page 3, numbered paragraph 2, claims 1-12 and 19-21 were rejected under 35 U.S.C. § 112, 2nd paragraph as being indefinite. This rejection is respectfully traversed.

Claims 1 and 19 were amended in light of the Examiner's comments. Specifically, claims 1 and 19 were amended to include a control unit determining whether a detergent is a powder detergent or a liquid detergent. The recitation of such is at page 7, paragraph 0038, lines 1-4, in which the control unit 30 determines whether a detergent used is a powdered detergent or liquid detergent depending on a corresponding one selected by a user among the buttons, such as a powdered detergent washing course button 31a and a liquid detergent washing course button 31b provided in the key input unit 31. Accordingly, withdrawal of the § 112, 2nd paragraph rejection is respectfully requested.

**II. Rejections under 35 U.S.C. § 102**

Pastryk

In the Office Action, at page 4, numbered paragraph 4, claims 1-6, 12, 19, 20, 23, and 24 were rejected under 35 U.S.C. § 102(b) as being unpatentable over U.S. Patent No. 5,870,906 to Pastryk et al. Please note that U.S. Patent No. 5,870,906 is correctly cited to Denisar. However, in light of the Examiner's comments, a response was made to the U.S. Patent No. 4,986,093 Pastryk reference.

This rejection is respectfully traversed because Pastryk does not discuss or suggest:

> a detergent feed pipe having a first end connected to the water tub and a second end disposed at an inlet of the rotary tub;
>
> a control unit determining whether a detergent used is a powdered detergent or a liquid detergent; and
>
> a detergent feed unit to feed the detergent contained in the water tub into the rotary tub through the detergent feed pipe, the detergent feed unit dissolving the detergent before feeding the detergent into the rotary tub in response to a determination from the control unit that the detergent is a powdered detergent,

as recited in amended independent claim 1.

Further, Pastryk does not discuss or suggest:

> a control unit determining whether a detergent used is a powdered detergent or a liquid detergent; and
>
> a detergent feed unit to feed the detergent contained in the water tub into the rotary tub, the detergent feed unit dissolving the detergent before feeding the detergent into the rotary tub in response to a determination from the control unit that the detergent is a powdered detergent,

as recited in amended independent claim 19.

In addition, Pastryk does not discuss or suggest:

> a powdered detergent contained in the water tub is dissolved and then sprayed into the rotary tub by the spraying unit to soak a center of a laundry load,

as recited in independent claim 23.

Also, Pastryk does not discuss or suggest that:

> first type of detergent is dissolved in the detergent feed unit before being fed from the water tub to the rotary tub, and a second type of detergent is fed from the water tub to the rotary tub without being dissolved in the detergent feed unit,

as recited in independent claim 24.

As a non-limiting example, the present invention according to claim 1, for example, is directed to a drum washing machine including a water tub, a rotary tub, a detergent feed pipe, a control unit, and a detergent feed unit. The rotary tub is rotatably provided in the water tub. The detergent feed pipe has a first end connected to the water tub and a second end disposed at an inlet of the rotary tub. The control unit determines whether the detergent used is a powdered detergent or a liquid detergent. The detergent feed unit feeds the detergent contained in the water tub into the rotary tub through the detergent feed pipe and dissolves the detergent before feeding the detergent into the rotary tub in response to a determination from the control unit that the detergent is a powdered detergent.

Pastryk discusses an automatic washer including a washing machine 10 having a water tub 24 within which is a perforate spin basket 25, where the spin basket 25 defines a wash chamber. Surrounding a top opening 46 above the tub 24, there are a plurality of wash additive dispensers 50, 52 and 54 which can be used for dispensing additives, such as bleach, fabric softener or detergent, into the wash load at the appropriate time in the automatic wash cycle.

Each of the dispensers 50, 52 and 54 are supplied with liquid through a separate dedicated conduit 56, 58, 60 respectively, where each of the conduits 56, 58 and 60 may be connected to a fluid source by respective operated valves 62, 64 and 66. The dispenser 54 that dispenses detergent has openings 131 through a bottom wall 132 thereof which communicate with a space 134 between the basket 25 and the tub 24.

Pastryk does not discuss or suggest the use of a detergent feed pipe that has a first end connected to a water tub and a second end disposed at an inlet of a rotary tub. In Fig. 6, for example, the dispensers 50, 52 and 54 are shown in communication with the water tub 24. However, the dispensers 50, 52 and 54 are not in communication with a detergent feed pipe that has a first end connected to the water tub 24 and a second end disposed at an inlet of the rotary tub 25. Further, the Examiner interprets a detergent feed pipe to correspond with recirculating conduit 74, which only recirculates water. The Applicants respectfully submit that conduit 74 is not a detergent feed pipe, as Pastryk clearly discusses that the detergent is dispensed through detergent dispenser 52. Further, conduit 74 does not have a first end connected to the water tub 24 and a second end disposed at an inlet of the spin basket 25.

In addition, Pastryk does not discuss or suggest the use of a control unit which determines whether a detergent used is a powdered detergent or a liquid detergent. Pastryk makes no such discussion of a determination based on the type of detergent used, i.e., powdered or liquid. In addition, Pastryk does not discuss or suggest the use of a detergent feed unit which feeds detergent contained in a water tub into a rotary tub through a detergent feed pipe, and dissolves the detergent before feeding the detergent into the rotary tub in response to a determination from a control unit that the detergent is a powdered detergent.

First, Pastryk does not suggest that detergent contained in water tub 24 is fed into the spin basket 25 through a detergent feed pipe, alleged by the Examiner to correspond with conduit 74. Conduit 74 does not feed detergent contained in the water tub 24 into the spin basket 25. Pastryk includes no discussion of the conduit 74 feeding detergent from the water tub 24, and does not suggest that a first end of the conduit 74 is connected to the water tub 24 and a second end of the conduit 74 is disposed at an inlet of the water tub 24.

Second, Pastryk does not suggest that a detergent feed unit dissolves detergent before feeding detergent into spin basket 25 in response to a determination from a control unit that the detergent is a powdered detergent. There is no discussion of a distinction between a liquid detergent or a powdered detergent in Pastryk, nor is there any discussion of detergent being

dissolved before feeding detergent from water tub 24 into spin basket 25 based on a determination that the detergent is powdered.

Also, the Examiner alleges that the mixing tank 70 and the pump 28 correspond with a detergent feed unit. The Applicants respectfully submit that Pastryk specifically recites that the dispenser 52 is used for dispensing detergent into the wash load. Further, nowhere in Pastryk is there discussion of the mixing tank 70 dissolving the detergent before feeding the detergent into the water tub 24. Pastryk discusses that the mixing tank 70 receives and stores a concentrated solution of detergent during the wash cycle, but Pastryk does not suggest that the mixing tank 70 dissolves the detergent before feeding the detergent into the tub 24, and more particularly, in response to a determination that the detergent is a powdered detergent.

As to claims 23 and 24, the Examiner appears to include no discussion as to how Pastryk reads on the elements of claims 23 and 24. Specifically, the Applicants respectfully submit that Pastryk does not discuss dissolving powdered detergent contained in water tub 24 and then spraying the dissolved detergent into spin basket 25 by a spraying unit to soak a center of a laundry load. The Examiner alleges that recirculating nozzle 41 corresponds with a spraying unit for spraying into the spin basket 25. However, Pastryk does not discuss or suggest that a powdered detergent contained in the water tub 24 is dissolved and then sprayed into the rotary tub by the nozzle 41 to soak a center of a laundry load. Pastryk does not discuss first dissolving a powdered detergent and then spraying the detergent into spin basket 25.

In addition, Pastryk does not suggest that a determination is made as to a first or second type of detergent, and that a first type of detergent is dissolved in a detergent feed unit before being fed from water tub 24 into spin basket 25 and a second type of detergent is fed from water tub 24 to spin basket 25 without being dissolved in the detergent feed unit. Pastryk makes no distinction between first and second types of detergent and includes no discussion of one type of detergent being dissolved before being fed from water tub 24 to spin basket 25 and another type of detergent not being dissolved and being fed directly from water tub 24 into spin basket 25.

Therefore, as Pastryk does not discuss or suggest, "a detergent feed pipe having a first end connected to the water tub and a second end disposed at an inlet of the rotary tub; a control unit determining whether a detergent used is a powdered detergent or a liquid detergent; and a detergent feed unit to feed the detergent contained in the water tub into the rotary tub through the detergent feed pipe, the detergent feed unit dissolving the detergent before feeding the detergent into the rotary tub in response to a determination from the control unit that the detergent is a powdered detergent," as recited in amended independent claim 1, Pastryk does

not discuss or suggest, "a control unit determining whether a detergent used is a powdered detergent or a liquid detergent; and a detergent feed unit to feed the detergent contained in the water tub into the rotary tub, the detergent feed unit dissolving the detergent before feeding the detergent into the rotary tub in response to a determination from the control unit that the detergent is a powdered detergent," as recited in amended independent claim 19, Pastryk does not discuss or suggest that, "a powdered detergent contained in the water tub is dissolved and then sprayed into the rotary tub by the spraying unit to soak a center of a laundry load," as recited in independent claim 23, and Pastryk does not discuss or suggest that, "a first type of detergent is dissolved in the detergent feed unit before being fed from the water tub to the rotary tub, and a second type of detergent is fed from the water tub to the rotary tub without being dissolved in the detergent feed unit," as recited in independent claim 24, claims 1, 19, 23 and 24 patentably distinguish over the reference relied on. Accordingly, withdrawal of the § 102(b) rejection is respectfully requested.

Claims 2-6, 12 and 20 depend either directly or indirectly from independent claims 1 and 19 and include all of the features of their respective independent claims, plus additional features that are not discussed or suggested by the reference relied upon. For example, claim 4 recites, "detergent dissolution space formed at the detergent feed pipe to temporarily store the detergent." Therefore, claims 2-6, 12 and 20 patentably distinguish over the reference relied upon for at least the reasons noted above. Accordingly, withdrawal of the § 102(b) rejection is respectfully requested.

Hardaway

In the Office Action, at page 4, numbered paragraph 5, claims 1-6, 12, 19, 20, 23, and 24 were rejected under 35 U.S.C. § 102(b) as being unpatentable over U.S. Patent No. 5,233,718 to Hardaway et al. This rejection is respectfully traversed because Hardaway does not discuss or suggest all the features of independent claims 1, 19, 23 and 24.

Hardaway discusses a tumble method of rinsing fabric in a washer including a fluid containing tub 34 within which a spin basket 35 sits, the spin basket 35 defining a wash chamber. Further, Hardaway discusses that the washing machine includes a plurality of wash additives dispensers 60, 62 and 64 for dispensing additives such as bleach or fabric softeners and detergent, the dispensers 60, 62 and 64 being supplied with liquid through a separate dedicated conduit 66, 68 and 70 respectively. Each of the conduits 66, 68 and 70 is connected to a fluid source in a conventional manner, as by respective solenoid operated valves 72, 74 and 76.

As to claims 1 and 19, in a discussion similar to that with respect to Pastryk, Hardaway does not discuss or suggest the use of a detergent feed pipe which has a first end connected to water tub 34 and a second end disposed at an inlet of spin basket 35. Conduits 66, 68 and 70 merely provide liquid into the dispensers 60, 62 and 64, but the conduits 66, 68 and 70 cannot be construed to be a detergent feed pipe which has a first end connected to water tub 34 and a second end disposed at an inlet of spin basket 35. Further, Hardaway does not include any discussion of a control unit determining whether a detergent used is a powdered detergent or a liquid detergent. Additionally, Hardaway does not discuss or suggest the use of a detergent feed unit which feeds detergent contained in water tub 34 into spin basket 35 through a detergent feed pipe and dissolving the detergent before feeding the detergent into the spin basket 35 in response to a determination from the control unit that the detergent is a powdered detergent.

As to claim 23, while Hardaway does show a spraying unit 51 which sprays into spin basket 35, Hardaway does not discuss or suggest that a powdered detergent contained in water tub 34 is dissolved and then sprayed into spin basket 35 by nozzle 51 to soak a center of a laundry load. No discussion is made in Hardaway as to, specifically, powdered detergent being dissolved and then sprayed into spin basket 35 by nozzle 51to soak a center of a laundry load.

As to claim 24, Hardaway includes no discussion of distinguishing between types of detergent. Specifically, Hardaway does not discuss or suggest that a first type of detergent is dissolved in a detergent feed unit before being fed from the water tub 34 to spin basket 35, and Hardaway includes no discussion that a second type of detergent is fed from water tub 34 to spin basket 35 without being dissolved in the detergent feed unit. Hardaway makes no distinction between types of detergent and makes no distinction as to the dissolution of one type and the non-dissolution of another type of detergent before the detergent is fed from water tub 34 to spin basket 35.

Therefore, as Hardaway does not discuss or suggest, "a detergent feed pipe having a first end connected to the water tub and a second end disposed at an inlet of the rotary tub; a control unit determining whether a detergent used is a powdered detergent or a liquid detergent; and a detergent feed unit to feed the detergent contained in the water tub into the rotary tub through the detergent feed pipe, the detergent feed unit dissolving the detergent before feeding the detergent into the rotary tub in response to a determination from the control unit that the detergent is a powdered detergent," as recited in amended independent claim 1, Hardaway does not discuss or suggest, "a control unit determining whether a detergent used is a powdered detergent or a liquid detergent; and a detergent feed unit to feed the detergent contained in the

water tub into the rotary tub, the detergent feed unit dissolving the detergent before feeding the detergent into the rotary tub in response to a determination from the control unit that the detergent is a powdered detergent," as recited in amended independent claim 19, Hardaway does not discuss or suggest that, "a powdered detergent contained in the water tub is dissolved and then sprayed into the rotary tub by the spraying unit to soak a center of a laundry load," as recited in independent claim 23, and Hardaway does not discuss or suggest that, "a first type of detergent is dissolved in the detergent feed unit before being fed from the water tub to the rotary tub, and a second type of detergent is fed from the water tub to the rotary tub without being dissolved in the detergent feed unit," as recited in independent claim 24, claims 1, 19, 23 and 24 patentably distinguish over the reference relied on. Accordingly, withdrawal of the § 102(b) rejection is respectfully requested.

Claims 2-6, 12 and 20 depend either directly or indirectly from independent claims 1 and 19 and include all of the features of their respective independent claims, plus additional features that are not discussed or suggested by the reference relied upon. For example, claim 3 recites, "a spray nozzle provided at the second end of the detergent feed pipe to spray the detergent into the rotary tub." Therefore, claims 2-6, 12 and 20 patentably distinguish over the reference relied upon for at least the reasons noted above. Accordingly, withdrawal of the § 102(b) rejection is respectfully requested.

### III. Rejections under 35 U.S.C. § 103

In the Office Action, at page 6, numbered paragraph 9, claims 7 and 8 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Pastryk or Hardaway in view of U.S. Patent Publication No. 2003/0208855 to McAllister et al. This rejection is respectfully traversed.

As discussed above with respect to independent claim 1, neither Pastryk nor Hardaway discusses or suggests all the features of independent claim 1. McAllister fails to make up for the deficiencies in Pastryk or Hardaway. Therefore, independent claim 1 patentably distinguishes over the reference relied upon. Claims 7 and 8 depend either directly or indirectly from independent claim 1 and include all the features of claim 1, plus additional features that are not discussed or suggested by the references relied upon. For example, claim 7 recites, "a motor to rotate the rotary tub in opposite directions, wherein the control unit controls the motor to rotate the rotary tub after feeding the set amount of water into the water tub." Therefore, claims 7 and 8 patentably distinguish over the references relied upon for at least the reasons noted above. Accordingly, withdrawal of the § 103(a) rejection is respectfully requested.

In the Office Action, at page 7, numbered paragraph 10, claims 9 and 21 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Pastryk or Hardaway. This rejection is respectfully traversed.

As discussed above with respect to independent claims 1 and 19, Pastryk and Hardaway do not discuss or suggest all the features of independent claims 1 and 19. Claims 9 and 21 depend either directly or indirectly from independent claims 1 and 19 and include all the features of their respective independent claims, plus additional features that are not discussed or suggested by the references relied upon. For example, claim 9 recites that, "the control unit drives the pump to reciprocate the detergent contained in the water tub between an inside of the water tub and the detergent feed pipe to dissolve the powdered detergent." Therefore, claims 9 and 21 patentably distinguish over the reference relied upon for at least the reasons noted above. Accordingly, withdrawal of the § 103(a) rejection is respectfully requested.

In the Office Action, at page 8, numbered paragraph 11, claims 10 and 11 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Pastryk or Hardaway in view of U.S. Patent No. 5,870,906 to Denisar. This rejection is respectfully traversed.

As discussed above with respect to independent claim 1, Pastryk and Hardaway do not discuss or suggest all the features of independent claim 1. Denisar fails to make up for the deficiencies in Pastryk or Hardaway. Therefore, claim 1 patentably distinguishes over the references relied upon. Claims 10 and 11 depend either directly or indirectly from independent claim 1 and include all the features of claim 1, plus additional features that are not discussed or suggested by the references relied upon. For example, claim 10 recites, "a key input unit having a powdered detergent button, the control unit determining whether the detergent contained in a lower portion of the water tub is the powdered detergent according to the powdered detergent button being selected in the key input unit." Therefore, claims 10 and 11 patentably distinguish over the references relied upon for at least the reasons noted above. Accordingly, withdrawal of the § 103(a) rejection is respectfully requested.

**Conclusion**

In accordance with the foregoing, claims 1, 5 and 19 have been amended. Claims 1-24 are pending and under consideration.

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

STAAS & HALSEY LLP

Date: 1/8/2007

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